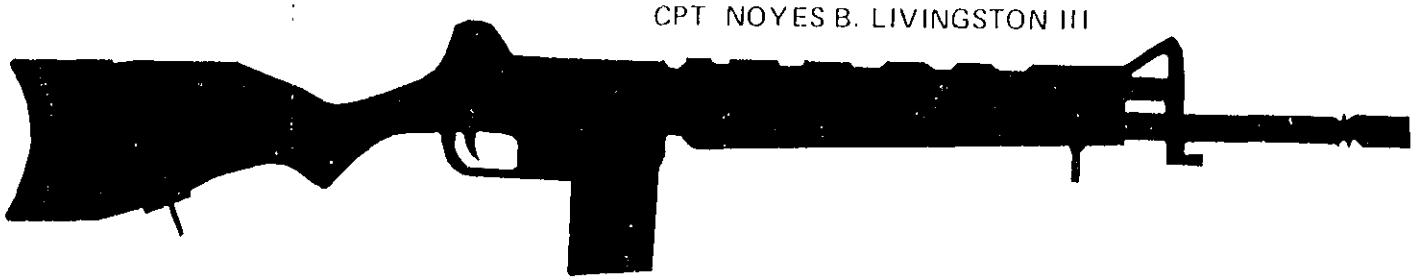
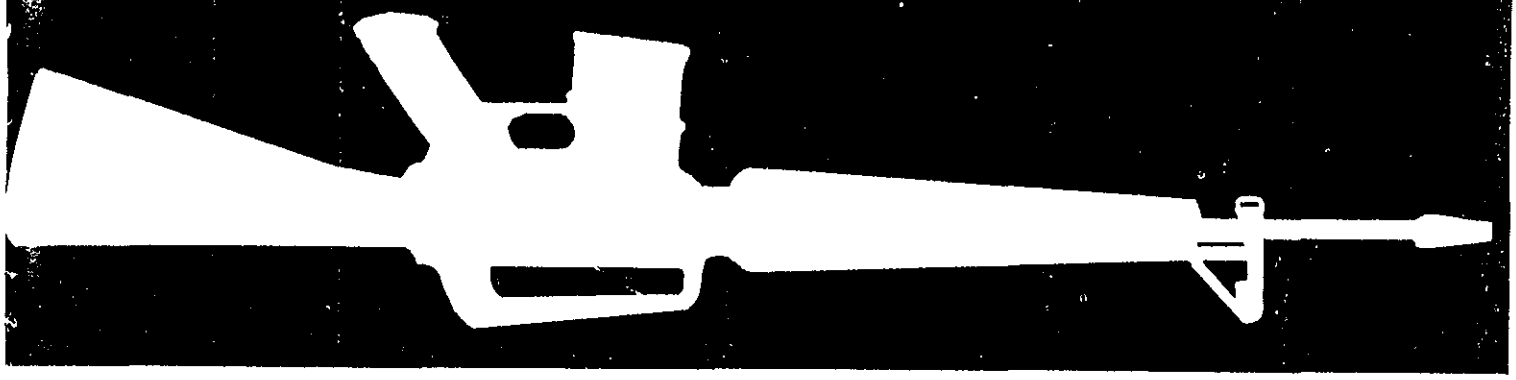
CPT NOYES B. LIVINGSTON III



TOMORROW'S RIFLE



The United States infantryman has fought on many battlefields over the years, always doing his best on each with whatever rifle he happened to have at the time. And his potential battlefield continues to change and expand. Through the use of thermal energy, ground surveillance radar, night vision devices, and intrusion warning systems, detection and engagement ranges are increasing in distance but decreasing in time. As a result, the U.S. infantryman will no doubt eventually get a new rifle to carry into battle — and he will need it.

His present rifle, the M16A1, is a good weapon. It is well made, lightweight, and accurate at battlefield ranges. It is handy to shoot, and it disassembles easily. In fact, it is almost everything a marksman or a service support soldier could ask for. Unfortunately, though, it is not designed to fill the basic requirements of the soldier who has to stake his life on it, the infantryman. So we need to begin thinking now about what kind of rifle we would like to have to replace it. We must not leave it to chance, as we have sometimes done in the past.

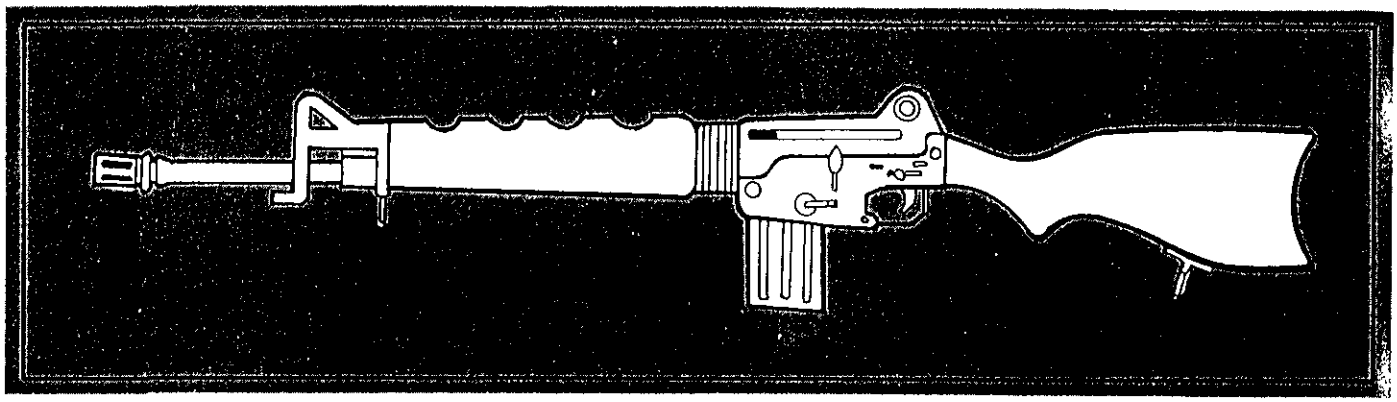
No matter how much warfare changes, though, the infantryman's war will still be brutal and intimate, and his rifle must be designed with that in mind. He must also believe in its capabilities and should be encouraged to use it. Besides shooting rapidly and accurately every time it is called on, an infantryman's rifle must be able to double as a club, a spear, or a crutch. It may also have to help make a litter, form part of a hasty ladder, or scoop out a hurried fighting position. In short, it must function when everything else has failed.

How should an infantry rifle be made to meet these high expectations? First of all, it cannot be encumbered with a carrying handle. We have all seen the classic example of a soldier running in training, one hand on his helmet and the other clutching his M16 by the carrying handle, like a commuter with his lunch pail chasing a departing bus. The handle makes the weapon easy to carry, but not easy to fire quickly.

A rifle must be built to fit naturally in a carry that lends itself to an attitude and position of readiness. The firing hand must grasp the small of the stock near the trigger, and the off hand must grab it slightly forward of its center of balance. A soldier should have to move only one hand to point and fire his weapon, not both.

Likewise, while a pistol grip may be necessary for a light machinegun, it is a liability on a rifle. Given a rifle with a pistol grip, a soldier cannot drop to the ground into the prone position without removing one hand from his weapon to break his fall. If he does not use the pistol grip, but holds onto the stock to let the butt of the rifle strike the ground instead, he must release his hold before he can reach the grip and shoot. The same soldier cannot cease firing and jump up to rush forward without removing his firing hand completely from his weapon to grab the stock and push off with it. It is extremely difficult to hold onto a pistol grip and get up another way.

Once up and running, this soldier cannot fire his remaining rounds and then lunge effectively at his opponent with his bayonet, or follow up with a butt stroke, without completely losing hold of his rifle with his



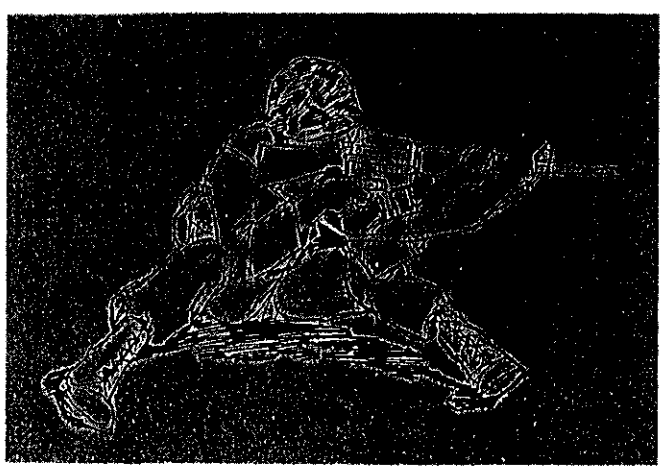
strongest hand. Although bayonet fighting may be a relatively small thing,when it is all an infantryman has left, it is everything, and close combat is no place for changing hands or coming in second best.

TECHNIQUES

A pistol grip also discourages the use of several important shooting techniques. With such a grip, a soldier's arm follows the angle of his firing hand when he is holding onto his rifle, causing his elbow to press against the side of his body while he fires. This eliminates the shoulder pocket that the weapon's butt is supposed to fit into to lessen the effect of recoil, steady the weapon, and keep it from slipping off his shoulder. Without a good shoulder pocket, it is hard for a soldier to maintain a firm stock weld with his cheek, to make his head move with the rifle as it recoils, and to keep his eye aligned with the sights.

A rifle should have a semi-pistol grip to improve marksmanship and to allow the soldier to hold it while running, leaping, and crawling and still have his firing hand in position to pull the trigger. It should also have a semi-straightline stock with a raised comb. The gas cylinder and operating rod should be above the barrel to reduce muzzle climb when the rifle is fired. Because the small of the stock would drop to form the semi-pistol grip, the rifle cannot have a buffer behind the receiver as the M16 does. There are many existing weapon designs, such as the FN-FAL, the AK, the AR18, the SG 540, and the Valmet M62, that can be modified to fit a traditional rifle stock.

In a rifle of this type, there would be no gas tube — as in the M16 — to blow contaminants into the rifle's action or gas and excess lubricant into the firer's eyes. The bolt would lock fully until it was withdrawn by the operating mechanism, instead of using a delayed blowback principle, so varying qualities of ammunition could be used. The barrel would be heavy enough to support a bayonet, and its bore and chamber would be chrome-plated to resist corrosion and wear.



The rifle would share many of the beneficial features of the M16 and its contemporaries. The receiver would be split into an upper and lower group held together by takedown and pivot pins. This would allow placing the rear sight at the back of the receiver, instead of at the front, by doing away with a bolt cover like the one found on the AK. This placement would permit using a rear sight aperture and a longer sight radius.

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The lower receiver group would incorporate a sturdy integral magazine well and a winter trigger guard that would swing forward against the magazine when released. It would accept M16 aluminum or nylon magazines and would have all the weapon's controls accessible from the firing position. The selector lever would be manipulated with the firing hand thumb, and the magazine catch button would be worked by the trigger finger. The bolt catch would be released by the thumb of the loading hand after a loaded magazine was inserted. When the firer pulled back on the charging handle to lock the bolt to the rear, the bolt catch would be engaged with the firing hand thumb.

EJECTION

The upper receiver would have a covered ejection port on its right side and a charging handle fixed to the bolt carrier on its left. There would be no bolt forward assist on the receiver as the charging handle could be pushed forward to close the bolt. Placing the charging handle on the left side would allow the action to be cycled from a

firing position without the firer moving his firing hand or the weapon, as must be done with the M14 or M16. The charging handle would be at the left front of the receiver where it would not strike the non-firing hand. Its motion would be hidden from the firer's view by its speed and by the rear sight's elevation drum, which would also be on the left.

The rifle would be a little longer and slightly heavier than the M16. It should fire at a moderate cyclic rate from the closed bolt position with the bolt remaining open after the last round was ejected. Automatic fire should be limited by a 3- or 4-round burst control mechanism. It would have a concave recoil pad to hold it in place during automatic fire, and it would accept an M16 clothespin bipod.

The new rifle's flash suppressor, sling swivels, bayonet, bayonet stud, and front sight assembly would be the same as those on the M16. Its rear sight would be similar to the one on the M14. The fiberglass stock would be made like the M16's, and the easily gripped triangular handguards would be held on with a slipring in the same way. The stock should not be constructed to fold or collapse because that feature would make it less rigid. In addition to the standard 20- and 30-round M16 magazines, a short magazine that fits flush with the bottom of the magazine well should be issued for civil disturbance and ceremonial duties.

Many excellent weapons made by friendly nations, and some by not so friendly ones, are available that we can examine and test during the process of developing our own rifle. It is important to keep in mind that our rifleman does not need the most sophisticated design possible, one such as the Austrian STG 77, the French MAS, or the Swedish MKS, but he does deserve an infantry weapon that fits the conditions under which he must fight.

This proposed rifle is offered to support, not replace, the squad and platoon automatic weapons. It would first serve the rifleman with aimed semiautomatic or limited burst fire. Its adoption would result from the recognition that infantry combat is more than a "mad minute" fought by individuals. An updated yet traditional rifle would reaffirm the infantryman's role and signal a return to the tactics of soldiers fighting together. Fire superiority would become the product of superior fire by the unit, not random fire by its members.

If we begin now to plan for the rifle of the future, perhaps when the time comes for a quick decision on a replacement for our present rifle, we will have the right one waiting in the wings.

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